

## **[Wilms Tumor - Childhood - Diagnosis](#) [1]**

**This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 08/2015**

**ON THIS PAGE:** You will find a list of the common tests, procedures, and scans that doctors can use to find out what's wrong and identify the cause of the problem. To see other pages, use the menu on the side of your screen.

Doctors use many tests to diagnose a tumor and find out if it has spread to another part of the body, called metastasis. Some tests may also determine which treatments may be the most effective. For most tumors, a biopsy is the only way to make a definitive diagnosis of cancer. If a biopsy is not possible, the doctor may suggest other tests that will help make a diagnosis. Imaging tests may be used to find out whether the tumor has spread.

This list describes options for diagnosing this type of tumor, and not all tests listed will be used for every child. Your child's doctor may consider these factors when choosing a diagnostic test:

- Age and medical condition
- Type of tumor suspected
- Signs and symptoms
- Previous test results

In addition to a physical examination, the following tests may be used to diagnose a Wilms

tumor:

- **Blood/urine tests.** Doctors will take samples of your child's blood and urine. The results of these tests will help the doctor learn more about the tumor and your child's general health.
- **X-ray.** An x-ray is a way to create a picture of the structures inside of the body, using a small amount of radiation.
- **Ultrasound** [3]. An ultrasound uses sound waves to create a picture of the internal organs. A transmitter that emits sound waves is moved over the body. A tumor generates different echoes of the sound waves than healthy tissue, so when the waves are bounced back to a computer and changed into images, the doctor can find a tumor inside the body. The procedure is painless.
- **Computed tomography (CT or CAT) scan** [4]. A CT scan creates a three-dimensional picture of the inside of the body with an x-ray machine. A computer then combines these images into a detailed, cross-sectional view that shows any abnormalities or tumors. A CT scan can also be used to measure the tumor's size. Sometimes, a special dye called a contrast medium is given before the scan to provide better detail on the image. This dye can be injected into a patient's vein or given as a liquid to swallow.

The first CT scan of the abdomen and pelvis will help show if the Wilms tumor has spread from the kidney into the blood vessels, particularly the inferior vena cava. The inferior vena cava is the major vein that carries blood from the legs, pelvis, and abdomen to the heart. If this is the case, the doctor will often recommend chemotherapy before surgery. (See the [Treatment Options](#) [5] section.) A chest CT may be used to find out if the tumor has spread to the lungs.

- **Magnetic resonance imaging (MRI)** [6]. An MRI uses magnetic fields, not x-rays, to produce detailed images of the body. MRI can also be used to measure the tumor's size. A special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient's vein or given as a liquid to swallow.
- **Bone x-ray and bone scan** [7]. Bone x-rays and bone scans look for cancer in the bones of children who have a rare kidney tumor called clear cell [sarcoma](#) [8]. A bone scan uses a radioactive tracer to look at the inside of the bones. The tracer is injected into a patient's vein. It collects in areas of the bone and is detected by a special camera. Healthy bone appears gray to the camera, and areas of injury, such as those caused by cancer, appear dark.

- **Surgery or biopsy** [9]. For children with a mass in the kidney that appears to be a [stage I or stage II Wilms tumor](#) [10], a surgeon usually performs an abdominal operation called a laparotomy. This surgery removes the affected kidney and tumor. If the tumor is too large to be removed, or if it has an abnormal appearance on CT or MRI scans, the surgeon will only perform a biopsy. A biopsy is the removal of a small amount of tissue for examination under a microscope.

A pathologist then analyzes the sample(s) removed during surgery or the biopsy to determine whether cancer cells are present. If they are, the pathologist will also identify the cell type, which will help the doctor recommend an initial treatment. A pathologist is a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease.

Patients who have what looks like bilateral Wilms tumors based on imaging studies will usually not have a biopsy at diagnosis. Instead, they usually have a biopsy after six weeks of chemotherapy.

- **Chromosome tests.** The pathologist may test the tumor tissue removed during the biopsy for changes in chromosomes 1 and 16. A tumor with changes in both of these chromosomes will not respond as well to standard treatment. Current research studies for Wilms tumor use more chemotherapy to treat children with a tumor that has these changes. (See the [Treatment Options](#) [5] section.)

After diagnostic tests are done, your child’s doctor will review all of the results with you. If the diagnosis is Wilms tumor, these results also help the doctor describe the tumor; this is called staging.

*The [next section in this guide is Stages](#) [10], and it explains the system doctors use to describe the extent of the disease. Or, use the menu on the side of your screen to choose another section to continue reading this guide.*

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- [2] <http://www.cancer.net/es/node/51>
- [3] <http://www.cancer.net/node/24714>
- [4] <http://www.cancer.net/node/24486>
- [5] <http://www.cancer.net/node/19343>
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